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**NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION NEWSLETTER**



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D'URVILLE ISLAND ARCHAEOLOGICAL SURVEY - 1973

N. J. and K. E. Prickett

An archaeological survey was carried out on D'Urville Island in January and February 1973. Financial assistance was given by the Lands and Survey Department and the New Zealand Historic Places Trust. A full report has been written (Prickett and Walls, 1973), and an account of some aspects of the work has appeared in "Forest and Bird" (Prickett, 1974).

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INTRODUCTION

"Rangitoto, or D'Urville Island, on which Captain Cook found no inhabitants, according to Maori tradition, had at some time or other a large population. The numerous remains of pit dwellings scattered over the island seem to confirm the tradition and make it worthy the attention of archaeologists."

(Lands and Survey Department, 1898)

The special place of D'Urville Island in New Zealand archaeology has long been recognised by archaeologists. Nowadays, however it is not 'pit dwellings' that attract our special interest but the island's argillite quarries. Archaeological work which has been carried out on the island however, even quite recently, has been based on old ideas and interests. These may be Maori traditions, to which the opening quote refers, or archaeological myth, of which the quote provides an early example. Whether in search of Maori tradition or archaeological myth, interest in D'Urville Island has tended to be centred on a limited range of problems confined to a limited range of sites.

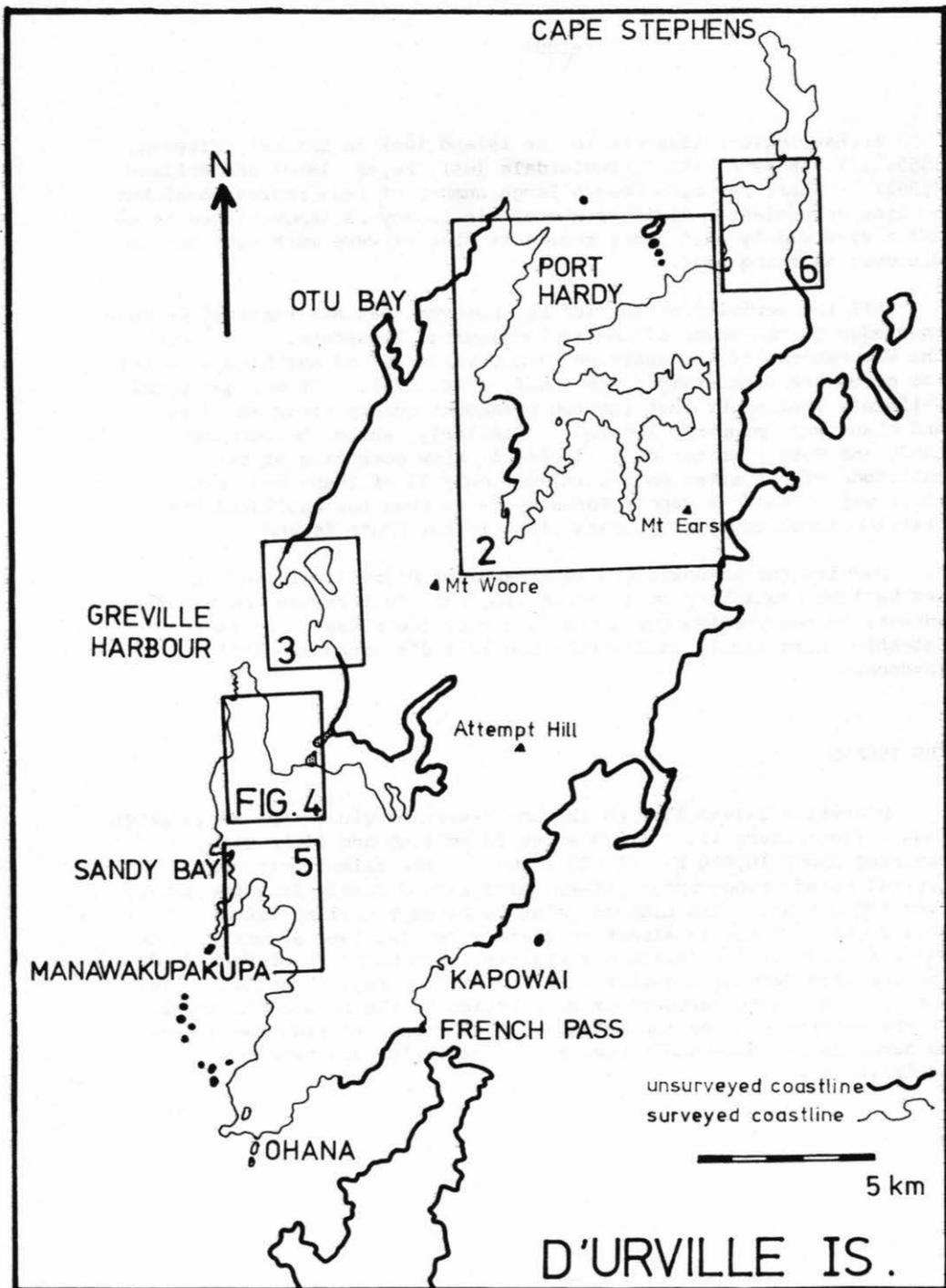
Archaeological visitors to the island include Skinner (Freeman, 1959: 11), Thomson (1918), Teviotdale (ms), Keyes (1960) and Wellman (1962). There has also been a large number of less professional but no less enthusiastic visitors whose main legacy is impoverished sites and a view widely held among residents that we were much too late to discover anything new.

All the activity on the island, however, has not resulted in much knowledge of the shape of the archaeological landscape. For long the whereabouts of the quarries on D'Urville Island has been a matter for guesswork (for example, see Duff, 1946: 124). It was not until Wellman's 1962 paper that the two paramount quarry areas at Mt Ears and Ohana were properly located. Similarly, while the anonymous Lands and Survey writer of 1898 clearly knew something of the multitude of pit sites on the island, only 11 of these had found their way on to Site Record Forms by 1969, when Law published his distributional study of 'kumara pits' in the South Island.

Despite the acknowledged importance of D'Urville Island in New Zealand prehistory, most archaeological visitors have sought the answers to too precise questions in a very few sites. It is the intention here simply to describe the island's archaeological landscape.

#### THE ISLAND

D'Urville Island lies on the north-west margin of the Marlborough Sounds (see Figure 1). It is about 32 km long and 11 km wide, covering about 16,000 ha (40,000 acres). The island possesses a typical Sounds topography: steep hills rise directly from the sea to over 700 metres. The highest point is Attempt Hill at 726 m (2,382 ft). There is almost no flat or rolling land anywhere. On the west side of the island are the two large harbours of Port Hardy and Greville Harbour together with the smaller Manawakupakupa. The entrances to these harbours present breaks in the formidable cliffs of the weather side of the island. On the eastern side there are no harbours but many small bays and coves facing out over Admiralty Bay.



For the archaeologist, geological interest centres on the belt of ultramafic rocks which extends north to D'Urville Island from the head of the Wairau River 160 km to the south. This 'mineral belt' consists of serpentinite and a variety of soda-metasomatized argillites which outcrop on the island from Ohana to north of Mt Ears. An introduction to the geology of D'Urville Island can be found in Beck (1964) and Coleman (1966).

Much of the north and west of the island is now cleared of bush and is under exotic grasses. Throughout the high centre of the island however, and on the steep eastern slopes, there remains much forest which is mostly modified to some degree. D'Urville Island forest is dominated variously by hard beech (*Nothofagus truncata*), kamahi (*Weinmannia racemosa*) and kohekohe (*Dysoxylum spectabile*). The 'mineral belt' can easily be seen because it supports only manuka (*Leptospermum scoparium*) and other narrow leaved shrubs. A full discussion of D'Urville Island vegetation is contained in Oliver (1944).

The variety of bird life on D'Urville Island and the surrounding waters reflects the diversity of sea and land habitats. The rich waters of Cook Strait support great numbers of sea birds, while the open grasslands and extensive forest areas of the island have a wide range of native and exotic land birds. A bird list for D'Urville Island is contained in Prickett (1974: 4).

The climate of D'Urville Island is mild and windy - typical of those parts of Cook Strait not exposed directly to the south. The island is very exposed to winds funnelling through Cook Strait from the west and north-west. Rain falls mostly in winter - the island receiving up to about 1400 mm annually.

#### THE SURVEY

Access to the island is by launch from French Pass to Kapowai. The island itself is fairly well roaded except at the south end. Roads extend north to Patuki and west to the northern and southern shores of both Party Hardy and Greville Harbour.

The survey was mostly carried out on foot, although in Port Hardy we had the use of a boat which made the survey of the harbour possible. The writer's VW, the only car on the island, was equal to the rough roads and tracks, and transported the surveying party and gear. A launch was used to travel to Ohana at the southern tip of the island.

Figure 1 shows the areas of the island which were surveyed. The most important areas which were not visited were the east coast from Waitai Station south to Kapowai and the inner parts of Greville Harbour. With the exception of Otu, the coast between Greville Harbour and Port Hardy is precipitous cliff.

The surveying party was on the island from January 1 to February 14, 1973. Two hundred and twenty-two new sites were recorded and 34 of the 41 previously recorded sites were visited.

The separation and definition of sites is not easy. It is very often unclear just where a site begins and ends, and it is often a matter of choice whether, for example, a midden and nearby pit or terrace area are recorded as one or two or more sites. On a single spur south of Patuki homestead we recorded eight pit, earthwork sites which seemed discrete enough to deserve separate status, and there was as well midden spilling from the back beach section at the foot of the spur. On the other hand, a site (S10/23) at Opotiki which is listed as an "occupation site, walled garden area and pits" (Prickett and Walls, 1973: Appendix p. 5) includes stone walls, 19 pits scattered throughout the garden area, two or three terraces and a major occupation area.

Nonetheless, the listed types do reflect the major component of the various sites. Even 'occupation site' is not an entirely nebulous concept: such sites include midden, a flaking area, and perhaps an oven or two - in any event they deserve more than to be labelled 'midden'. In the following discussion the variety of site types listed for any one area does accurately enough reflect the variety of elements in the archaeological landscape.

There is a great variety in the scale and combination of sites throughout the island. For example, while some areas might be characterised by the large number of earthwork sites (with pits or terraces or both), others have few earthwork sites by comparison but may have many midden or occupation sites. An exploration of the figures in Table 1 will give some idea of the variety of archaeological landscapes on D'Urville Island.

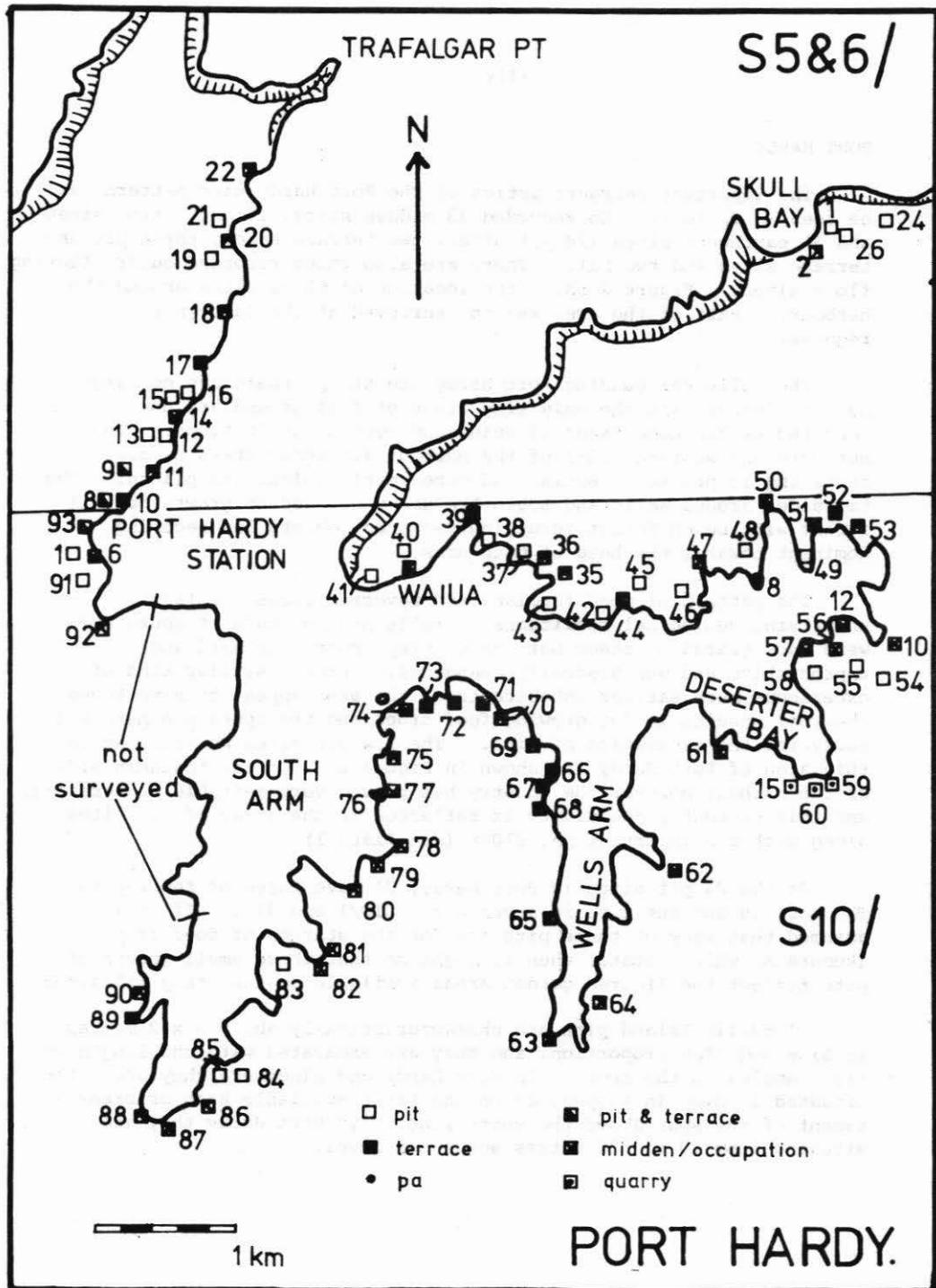
It can be seen in Table 1 that, for example, while the average pit site in Greville Harbour has about five pits, equivalent sites in the Port Hardy and Patuki Station areas have only about 2.5 pits. Again, while we recorded 31 earthwork sites in Port Hardy and 30 in Greville Harbour, the number of sites with midden (listed as 'occupation' or 'midden' sites) is 47 and 22 respectively. This kind of variety in archaeological landscape is most apparent in the case of the Mt Ears area where we recorded only quarries - and yet the more subtle differences between other areas can be seen as the result of basically similar factors. Just as the resources of areas differ, so do patterns of human exploitation and hence site patterns.

It is easy to assume a basically uniform prehistoric settlement pattern throughout the Marlborough Sounds area. We are encouraged in this by our reading of Cook's accounts of the inhabitants of Queen Charlotte Sound, and the engaging but unproductive comparisons we are led to draw on the kinds of gross differences between the Sounds and, for example, the Bay of Islands in the late 18th Century. The patterns of prehistoric settlement, however, are much more complex than our present widely scattered historical views allow us to suppose.

On D'Urville Island there appear to be three major kinds of archaeological landscapes. These are best illustrated by the Port Hardy, Greville Harbour and Patuki Station areas respectively. In Port Hardy there are many small scale pit sites and similarly small midden and occupation sites. In Greville Harbour, on the other hand, large beach occupation sites are surrounded by numbers of pit sites with relatively large numbers of pits. On the east coast of Patuki Station sites pits and terraces dot the hillsides above a steep rocky shore.

	Greville Harbour	Kapowai/French Pass	Manawakupakupa	Mt Ears	Ohana	Patuki	Port Hardy	Sandy Bay	Swamp and Skull Bays (Patuki West Coast)	
<i>Pa</i>	-	-	-	-	-	1	2	-	-	3
Pit sites	22	5	13	-	5	14	24	1	3	87
Pit and terrace sites	4	4	-	-	-	8	3	-	-	19
Terrace sites	4	-	2	-	1	9	2	1	1	20
Occupation sites	8	2	4	-	4	2	14	1	2	37
Midden sites	14	2	5	-	4	12	33	-	-	70
Walled gardens	-	1	2	-	1	-	-	-	-	4
Quarry/flaking floors	-	3	-	3	5	-	3	-	-	14
Oven site	-	-	-	-	-	1	-	-	-	1
Rockshelter	-	-	-	-	1	-	-	-	-	1
<b>TOTAL</b>	<b>52</b>	<b>17</b>	<b>26</b>	<b>3</b>	<b>21</b>	<b>47</b>	<b>81</b>	<b>3</b>	<b>6</b>	<b>256</b>
<b>FEATURES</b>										
Pits on pit sites	109	26	53	-	12	33	65	6	5	309
Pits on pit and terrace sites	19	12	-	-	-	57	3	-	-	91
Total pits (all sites)	130	38	72	-	12	90	77	6	7	432
Terraces on terrace sites	19	-	2	-	12	29	5	2	7	76
Terraces on pit and terrace sites	39	26	-	-	-	54	3	-	-	122
Total terraces (all sites)	58	26	4	-	12	83	22	2	7	214
Total features	188	64	76	-	24	173	99	8	14	646

TABLE 1: Some statistics of D'Urville Island sites.



PORT HARDY

The important characteristics of the Port Hardy site pattern can be seen in Table 1. We recorded 33 midden sites, 14 occupation sites and 31 earthwork sites (24 pit sites, two terrace sites, three pit and terrace sites and two *pa*). There are also three recorded quarry/flaking floor sites. Figure 2 shows the location of these sites around the harbour. Part of the area was not surveyed at the landowner's request.

The hills surrounding Port Hardy are steep, there are no large bays or beaches and the only tiny areas of flat ground are now occupied by the homesteads of Waiua and Port Hardy Stations. The northern and western sides of the harbour are under grass or are reverting to bracken, tauhinu and other early colonising plants. The hillsides around Wells and South Arm are under second growth coastal forest with beech forest occupying isolated pockets and becoming dominant towards the head of both arms.

The pattern of open farmland and reverted forest reflects underlying geological conditions. Wells Arm and much of South Arm were once grazed by sheep but the country proved too hard and unproductive and was gradually abandoned. From a similar kind of experience much earlier inhabitants of the area appear to have found the soil unsuitable for growing food crops and the spurs too hard and rocky for the excavation of pits. The few pit sites we recorded in this area of Port Hardy are shown in Figure 2. On the northern side of the harbour however the country has proved very suitable for grazing, and this present productivity is reflected in the array of pit sites along with the important *pa*, S10/8 (see Plate 1).

Of the 24 pit sites in Port Hardy, 21 have three or fewer pits. The most in any one site is seven pits (S10/1 and 41). If it is assumed that many of these pits are for the storage of food crops (kumara or white potato) then it might be that these small groups of pits reflect the limited garden areas available on the steep hillsides.

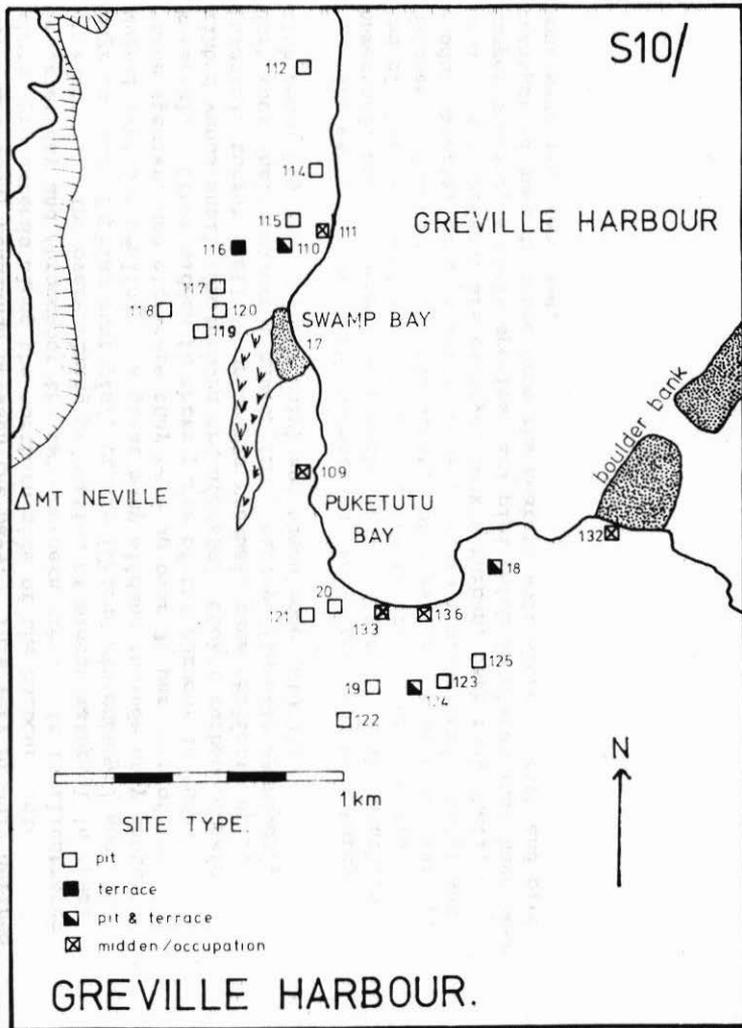
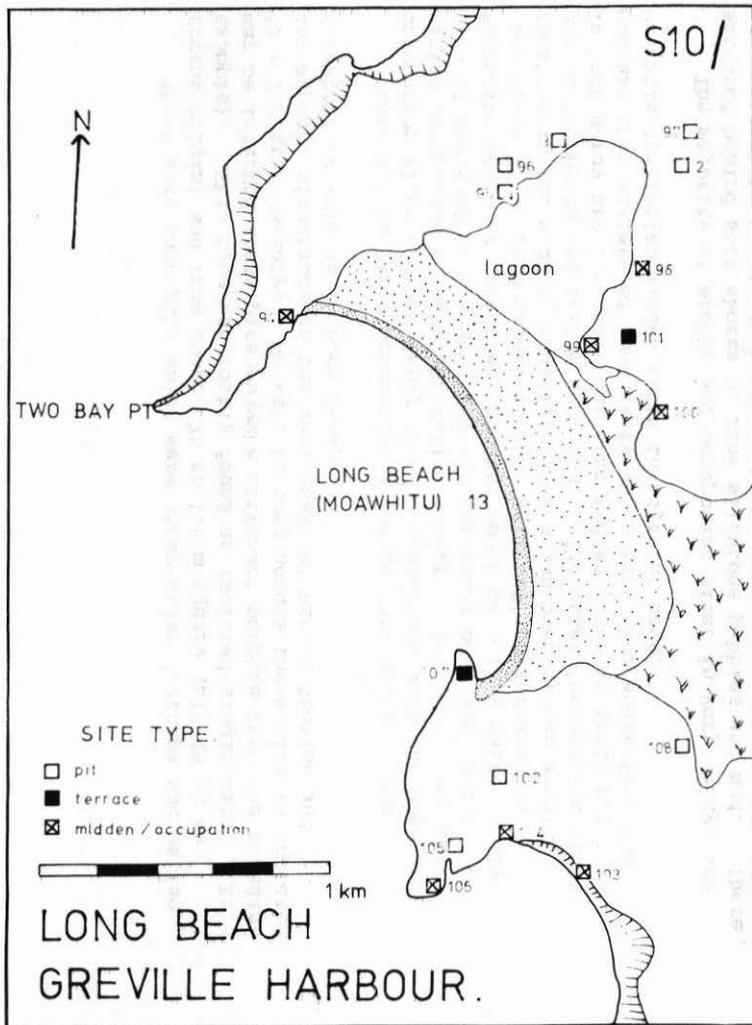
D'Urville Island pits are characteristically about 3 x 2 metres in size and plan proportion, and they are excavated with the length at right angles to the spur. In Port Hardy and elsewhere they are often situated in dips in a spur, or on the first available knob or break in ascent of the spur above the shore line. In Port Hardy they are situated from 10 to 120 metres above sea level.

There were some pits which were steep sided (perhaps suggesting recent origin) and from about .75 to 1.5 m square (S10/49 is an example). This type was mostly found as isolated single pits. It may be inferred these pits served a different purpose from the abundant '3 x 2 metre' variety. We were to come across these pits in isolated and exposed situations on the west coast of Patuki Station and elsewhere as well as in Port Hardy.

There are no large occupation sites in Port Hardy. The occupation sites of Port Hardy bear no comparison with the huge and varied occupation sites of Greville Harbour. Even the important site S5 and 6/22 just south of Trafalgar Point occupies, not an expansive beach or dune area, but the mouth of a tiny narrow gully (see Plate 2). It consists of some well defined terraces in addition to the midden, argillite flakes and oven stones eroding out of the beach and stream sections. The other 'occupation sites' in Port Hardy are little larger than midden sites in scale but possess that variety of components which sets them apart from the essentially similar midden sites in adjacent bays.

The majority of midden and occupation sites in Port Hardy, are situated behind soft shores of fine siltstone pebbles and mud. There are small rocky headlands between the bays. This very broadly defined shore type extends along the northern side of the harbour, into Deserter Bay and throughout the two southern arms. It is illustrated in Plate 1. The overwhelming proportion of midden material in these bays is pipi (*Paphies australe*), cockle (*Chione stutchburyi*) and mussel (*Mytilus edulis*). A great many middens include only these three species, and elsewhere they make up over 90 per cent of the material. Other midden in these parts of the harbour includes ribbed venus shell (*Protothaca crassicosta*), Cook's turban (*Cookia sulcata*), turret shell (*Maoricolpus roseus*), paua (*Haliotis* sp.), dark rock shell (*Haustorium haustorium*), catseye (*Lunella smaragda*), fish bone, dog bone (S10/79 only) and human bone (S10/71).

The eastern side of the harbour entrance, north of Port Hardy homestead, has a predominantly rocky shore, although at the southern end of this sheltered stretch of coast there are one or two sandy beaches. The nature of this stretch of coast can be seen in Plate 2. Midden material here is mostly mussel (again *Mytilus edulis* only) and paua. Also present are catseye, Cook's turban, dark rock shell, limpet species, a whelk species, and pipi which in places must have been transported some distance from the nearest soft shore. Fish and bird bone were also recorded.



There were no midden or occupation sites in the Port Hardy without some argillite flakes either in the section or water-rolled on the beach in front. In some sites (for example S10/47 and 74 and S5 and 6/22) there were very large quantities of primary flake material, rough-outs and reject bits and pieces. The argillite was mostly black or dark grey Mt Ears material, doubtless easily transported from Deserter Bay throughout the harbour. At Deserter Bay water-worn boulders can be found on the shore and outcrops are easily accessible on the hillside immediately behind. Here the three quarry/flaking floors were recorded: S10/15, 59 and 60.

Other stone material includes a range of light grey and green argillites, 'Ohana' argillite (in S10/56 and 90), large green 'Tramway Sandstone' boulders and a single piece of mid-grey/brown chert - a most unusual material to find on D'Urville Island (S5 and 6/20). 'Ohana' argillite is a shorthand term adopted here for the very characteristic pale grey material with black veins which comes from the Ohana quarries at the south end of the island.

#### GREVILLE HARBOUR

Greville Harbour presents an altogether different archaeological landscape to Port Hardy. This is true especially of the outer harbour area - there are similarities between the inner harbour area and Port Hardy as we shall see.

Greville Harbour is the best known archaeological resource on D'Urville Island. The great occupation sites of Moawhitu (Long) Beach (S10/13), Ragged Point Beach (S10/16), and Swamp Bay (S10/17), have been plundered for many years. Almost all D'Urville Island material in museums came from these sites. The terrace site at Puketutu Bay (S10/18) has also attracted some attention (Keyes, 1960: 260-261; 1962: 7 and 10; Golson, 1960: 392). The pattern of sites in the area is very complex however, and interest in only a few Greville Harbour sites has led to ignorance of important pit and terrace sites which are situated in some cases immediately behind the frequently visited occupation sites.

The characteristic Greville Harbour site pattern has a large occupation site surrounded by a number of fairly large pit sites and a very few discrete midden sites. This pattern can be seen centred on the four occupation sites of Long Beach, Ragged Point Beach, Swamp Bay and Puketutu (S10/133) - the last named having been much altered by recent occupation and farm development. This basic pattern is also repeated at Opotiki (S10/23) and Manawakupakupa (S10/149 and 150).

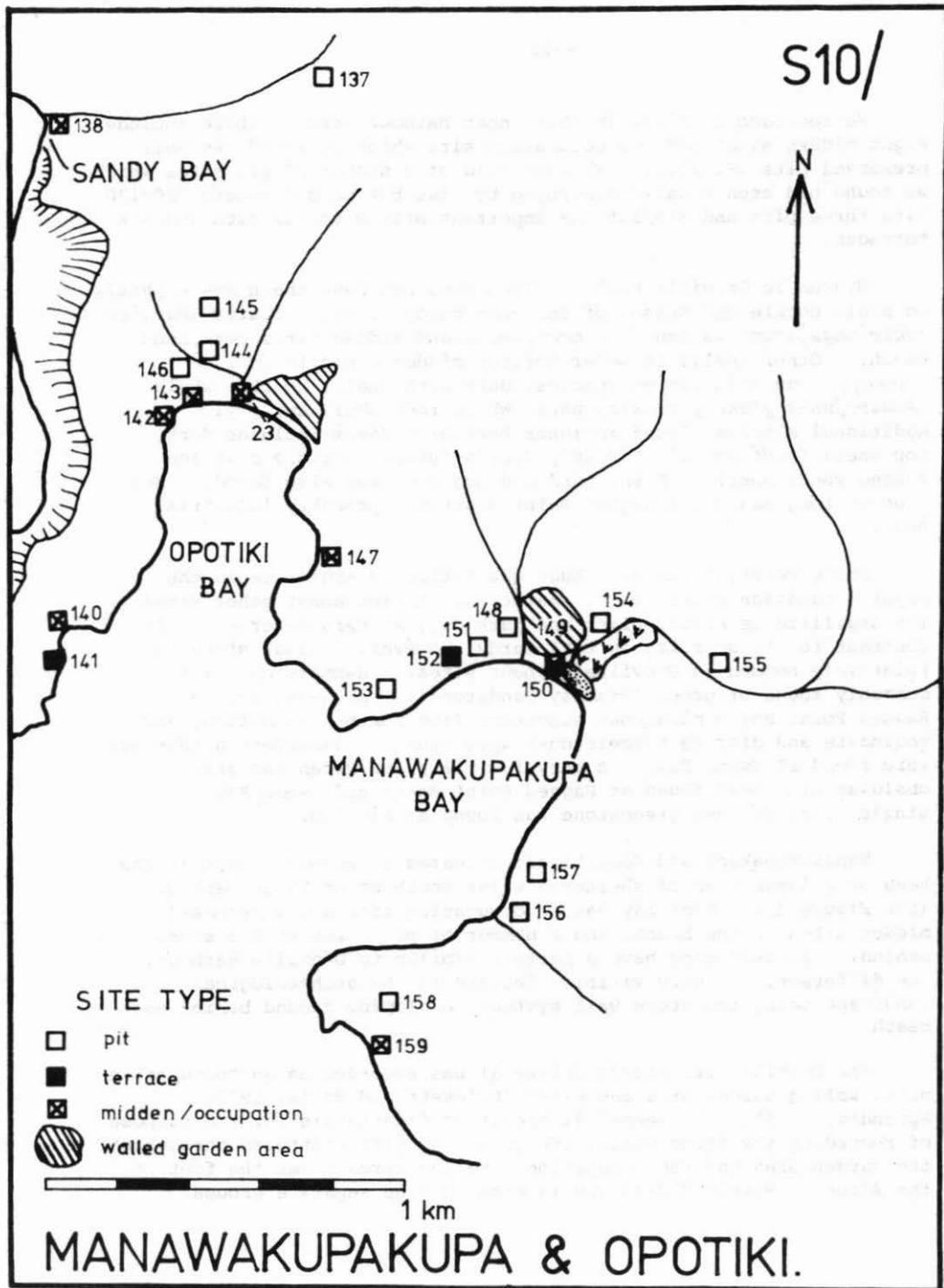
The Long Beach or Moawhiti occupation site covers an area of dunes about 2 km in length and .2-.5 km deep within the northern entrance of the harbour (see Figure 3 and Plate 3). The dune area is backed by a lagoon and swamp. Stone material and scattered midden can be found over most of the dune area. The site has suffered greatly from the erosion of shifting dunes and the depredations of professional and amateur curio hunters.

This huge area of occupation is the focus for seven discrete occupation and midden sites and 10 earthwork sites. The former are located behind the lagoon and above the rocky shore north and south of the main occupation area. There are eight pit sites. These include the important site S10/2 with 22 well preserved pits, situated behind the lagoon (see Plate 4). The terrace site S10/107 occupies a strong position on a headland at the south end of Long Beach and may have been a defended position.

The occupation site at Swamp (Owhai) Bay on the south side of the harbour occupies a similar kind of position as the Long Beach occupation site (see Figure 4). A swamp is barred by a bank of boulders and sand about 300 m in length. Occupation debris is found over the entire bar. The bay faces east up the harbour and is backed by the swamp and by steep hills rising to Mt Neville (342 m).

The Swamp Bay site is the focus for a single small midden site (S10/111) and for nine earthwork sites. The earthwork sites are located on steep spurs which descend to the swamp and to the harbour north of the bay. The seven pit sites have a total of at least 40 pits (probably more, in serpentine country infilled pits are sometimes problematical). There is also a pit and terrace site with one pit, and a single terrace site. The pit sites vary from about eight to 120 m above sea level.

We surveyed only a small part of the harbour above the Boulder Bank. Here the pattern of sites was reminiscent of that of Port Hardy. There were no broad sandy beaches and dune areas; the small beaches are made up of the same angular siltstone pebbles and mud as the inner beaches of the northern harbour. As in Port Hardy, this reflects a change in the underlying geology. Just east of the Owhai Bay homestead (in Puketutu Bay) the productive grassland based on the igneous rocks of the Brook Street Group (see Beck, 1964) is replaced by forest and reverting scrubland on the hard Greville formation.



We recorded 11 sites in this inner harbour area. These include eight midden sites and one occupation site which included two well preserved pits (S10/22). We were told of a number of pit sites which we found had been totally destroyed by pigs but we did record S10/130 with three pits and S10/135, an important site with six pits and six terraces.

Midden in Greville Harbour sites does not have the heavy emphasis on pipi, cockle and mussel of the Port Hardy sites. Tuatua (*Paphies subtriangulatum*) is found in occupation and midden sites near Long Beach. Other shells in outer harbour midden deposits include catseye, mussel, limpet species, dark rock shell, knobbed whelk (*Austrofusius glans*), cockle, paua, white rock shell and pipi. Additional material found in inner harbour middens includes dark top shell (*Zediloma atrovirens*), Cook's turban, *Dosinia anus* and ribbed venus shell. Fish, bird and dog bone was also found. Moa bone at Long Beach and Ragged Point Beach was probably industrial bone.

Stone material includes huge quantities of argillite in the major occupation sites and smaller quantities about other sites. The argillite is mostly black and dark grey Mt Ears material. In contrast to its scarcity in Port Hardy, however, 'Ohana' stone is relatively common in Greville Harbour sites. Hammerstones were commonly found of green 'Tramway Sandstone'. At Swamp Bay and Ragged Point Beach micaceous sandstone from north-west Nelson, and rodingite and diorite hammerstones were found. Sandstone grindstones were found at Swamp Bay. A very few flakes of green and grey obsidian also were found at Ragged Point Beach and Swamp Bay. A single piece of sawn greenstone was found at S10/100.

Manawakupakupa and Opotiki are situated in adjacent bays at the head of a large area of sheltered water south of Greville Harbour (see Figure 4). Each bay has an occupation site and some small midden sites on the beach, and a number of pit sites on the spurs behind. In this they have a pattern similar to Greville Harbour, the different, and very visible, feature in the archaeological landscape being the stone wall systems on sloping ground behind each beach.

The Opotiki site S10/23 (Plate 5) was recorded as an "occupation site, walled garden area and pits" (Prickett and Walls, 1973: Appendix, p. 5). It seemed difficult to disentangle for the purpose of recording the stone walls, the groups of pits scattered throughout the garden area and the occupation site and terraces at the foot of the slope. Within S10/23 are 19 pits in nine separate groups.

Eleven of the pits are found on the old shingle fan which is marked out by the stone walls, and eight are situated on the spurs immediately behind and to the side. Even those on the relatively easy slope of the old fan, however, are sited close to the edge of terraces or banks, no doubt to ensure the best possible drainage. On the spurs surrounding S10/23 are another three pit sites. These sites have a total of 14 pits. There is also one terrace site and four midden sites.

The walled garden site at S10/23 consists of a simple almost geometric design of stone walls on an old shingle fan which extends from two or three to about 20 metres above sea level. The walls themselves are reminiscent of the stone wall systems on the Palliser Bay coast except that they mostly run across the slope and not down it. In places there is midden deposited among the stones. The total length of walls is only about 300 metres and the small amount of material in them, together with the neatness of the plots which are enclosed, strongly suggests a boundary function rather than stone clearing function.

The occupation area is situated at the foot of the slope close by a small permanent stream. It appears to have been largely blown out by the wind, although there are some intact sections. Midden includes mostly pipi, also Cook's turban, catseye, cockle, mussel, paua, dark rock shell and white rock shell and a great deal of fish and bird bone. There are also some small pieces of moa bone. Stone material includes large quantities of black, grey and 'Ohana' argillite, granite, schist, grey obsidian, quartz and a single piece of grey chert. There is no midden or stone material in other sites at Opotiki which is any different from that listed for S10/23.

The garden walls (S10/149) at Manawakupakupa are very different from those at Opotiki (see Plate 6). Here the walls form massive straggling lines set close together and mostly running up and down the slope. The area of walls is about 2-3 ha, and a large proportion of this area must actually be under heaped stones. The stones and boulders appear to have been piled up as a result of clearing operations rather than simply to bound garden plots. In addition to the actual walls, which average about 5 m in width, there are numerous large piles up to 10 m in diameter.

On the slopes and spurs around the garden area are five pit sites with a total of 28 pits. Three more pit sites are situated on the south side of the bay. The site S10/148 is of special interest for the deep ditch dug across the spur uphill of the pits. This is an unusual feature on D'Urville Island. Any argument for its being defensive seems highly arguable from the nature of the site, however, and it is likely such trenches had a drainage function. The only other example on the island is at French Pass (S10/187). There is also one terrace site with a single terrace.

Midden is eroding from the wave cut beach section across the toe of the old fan and in several places behind. There appears to be no single dominant occupation site and in this Manawakupakupa is similar to Puketutu Bay, Greville Harbour. It is similar, too, in that the present woolshed and yards are situated on the most likely location of the old occupation site. It is typical of Sounds woolsheds that they are built on old occupation sites: an intriguing cultural continuity.

Midden eroding from the various deposits along the wave cut section includes pipi, mussel, catseye, cockle, ribbed venus shell, Cook's turban, white rock shell and dark rock shell and fish bone. Stone material includes black, grey and 'Ohana' argillite and a single water rolled diorite boulder.

#### PATUKI STATION

A third kind of archaeological landscape on D'Urville Island is to be found on the eastern side of Patuki Station. On the hillsides opposite the Rangitoto Islands, south of the Patuki homestead, sites pepper the spurs and hillsides above a predominantly rocky shore (see Figure 6 and Plate 7). The hillsides here are not as steep as elsewhere on the island, nor do they rise as high. The geology of this area now lends itself to highly productive grasslands, and in the same way as in the Greville outer harbour area the productive grassland of today is reflected by the many pit sites. Most of the peninsula leading north to Cape Stephens is made up of Patuki volcanics.

Above the short stretch of coast from Patuki homestead to Garden Bay are 20 earthwork sites and six small middens. As many as eight earthwork sites are situated on one spur up to 130 m above sea level. The sites vary greatly in size: at one end of the scale are nine pit sites with a total of only 20 pits, at the other end is the important pit and terrace site (S5 and 6/6) on the spur end immediately south of the homestead with about 30 pits and 40 to 50 terraces. Other important sites are S5 and 6/4, a terrace site with 10 or 11 extremely well preserved terraces, S5 and 6/48 with six pits and four or more terraces (despite the imposition of a large stock dam) and S5 and 6/59 which shows 10 pits at least, despite its slumped state. There are also three small pit and terrace sites.

Outside the area of particular interest here, just south of Hapuka Rocks, a small *pa* (S5 and 6/5) is situated on a naturally inaccessible promontory. This *pa* is shown in Plate 8. It has about 20 terraces but no pits.

The midden sites are very small and are mostly eroding from wave cut sections at the base of the steep slope behind tiny boulder beaches - or in the case of S5 and 6/71, a sandy beach. It is questionable whether they reflect activity which took place at beach level or on the steep spurs behind.

We know this part of D'Urville Island was not occupied in 1642 when Tasman sheltered here after his discouraging experience at Murderer's Bay (Beaglehole, 1961: 19), and we know as well there was no-one living here early in 1770 when Cook rested up before making for Botany Bay (Cook, 1955: 271-273). In January 1840, however, there were 200 people living at Oterawa just south of Garden Bay, and in the vicinity, "... an extensive tract of table-land is cleared by the natives for potatoes" (Wakefield, 1845, Vol. 1: 188). It is possible most of the sites in this part of the island belong to the post-contact period.

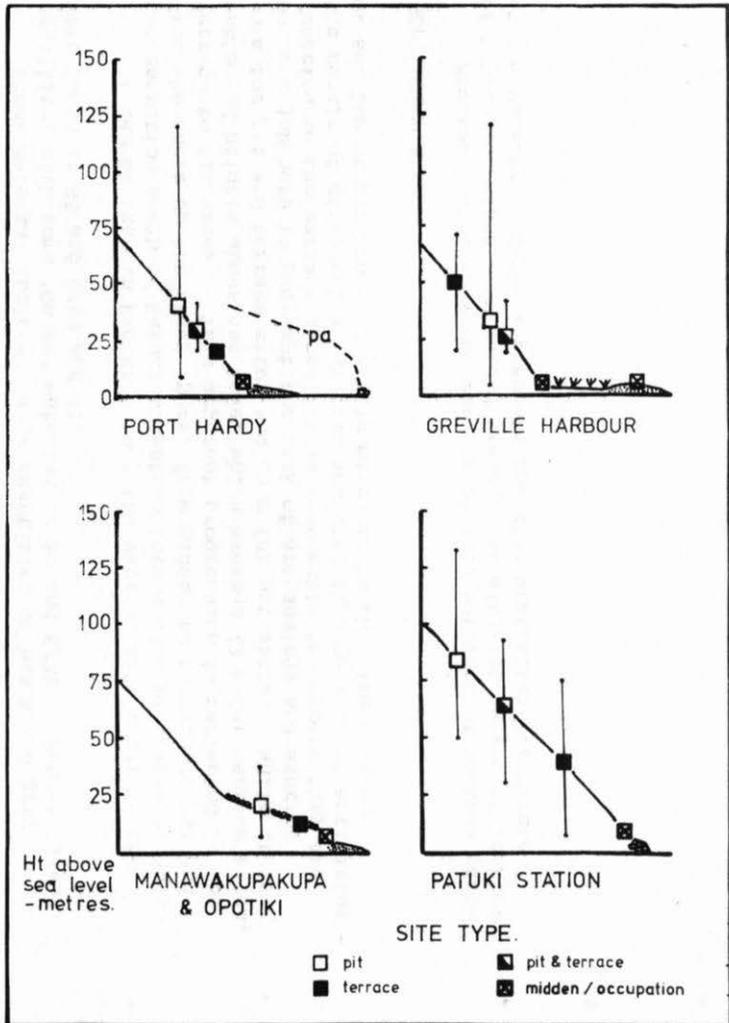
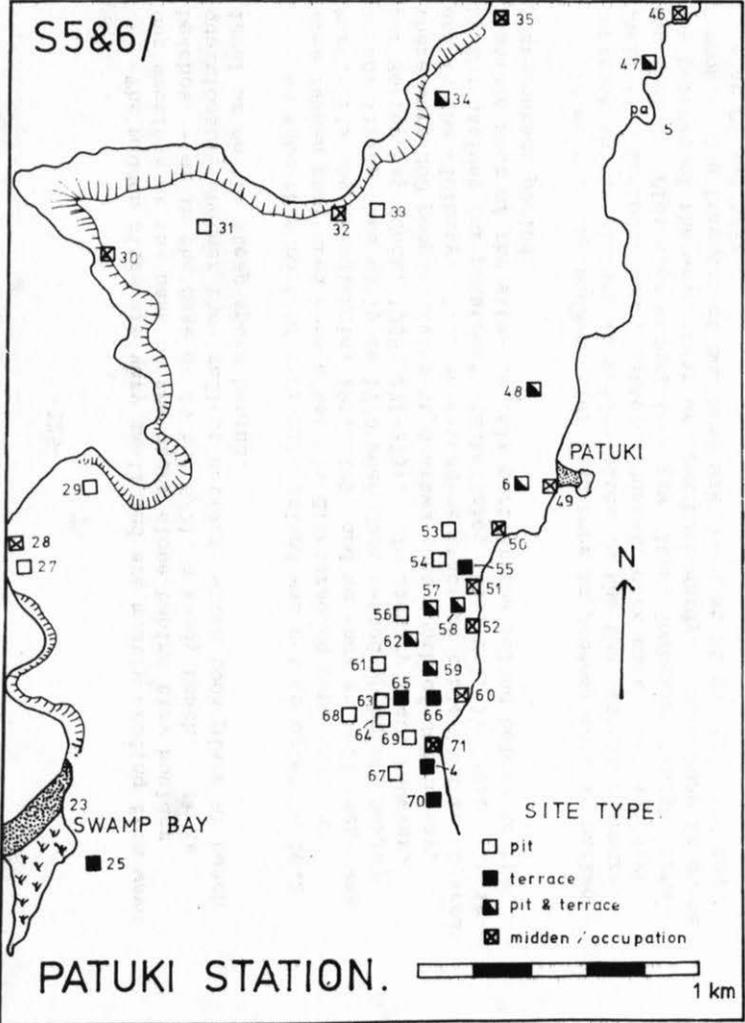
In most of the midden sites fish bone is predominant, in marked contrast to the picture in midden sites in the two western harbours. Shell fish includes paua, catseye, mussel, dark rock shell and dark top shell. Pipi also occurs in a few sites, doubtless brought from the beaches of the west coast or from Port Hardy. Bird bone is quite common. One fragment of moa bone was found at S5 and 6/71 and dog bone at S5 and 6/52.

Stone material includes large quantities of black and grey argillite, with some 'Ohana' material in S5 and 6/71. Schist files were found at S5 and 6/50 and 71.

It can be seen in Figure 6 that the various site types in the concentration south of Patuki homestead form a nice progression, away from the shore up the steep spurs, from midden to terrace to pit and terrace to pit sites. This apparent progression is reflected in the estimated heights above sea level which average 42 m for terrace sites, 65 m for pit and terrace sites and 85 m for pit sites. While it is not our job here to pre-empt the task of archaeology and ascribe function to the various sites, it is reasonable to suppose they are the result of different activities and that this pattern of activities - or settlement pattern - is neatly mirrored in the site pattern.

#### SOME DISCUSSION

Figures 2 to 6 show the variety of site patterns of various parts of D'Urville Island. Figure 7 presents an alternative way of looking at the variety. Table 2 presents the site statistics for Figure 7.



- PLATE 1. Port Hardy. Looking east towards the head of the harbour. The *pa*, S10/8, is on the point in the foreground.
- PLATE 2. Port Hardy. Looking north to Trafalgar Point and Nelson's Monument showing the productive rocky shore of this part of the harbour. S5 and 6/22 is in the mouth of the narrow gully on the left of the picture.
- PLATE 3. Long Beach (Moawhitu). The important occupation site S10/13 is situated in the dune area behind the beach. In the foreground is the terrace site S10/107.
- PLATE 4. Greville Harbour. The pit site S10/2 - situated behind the lagoon at Long Beach.
- PLATE 5. Opotiki. Stone walls, groups of its and an occupation site (top right) make up site S10/23.
- PLATE 6. The stone walls at Manwakupakupa. The pit site S10/148 is in the foreground.
- PLATE 7. Patuki Station. Looking north with the terrace site S5 and 6/4 prominent in the foreground.
- PLATE 8. Patuki Station. Looking north to the *pa* S5 and 6/5.



Plate 1



Plate 2



Plate 3



Plate 4

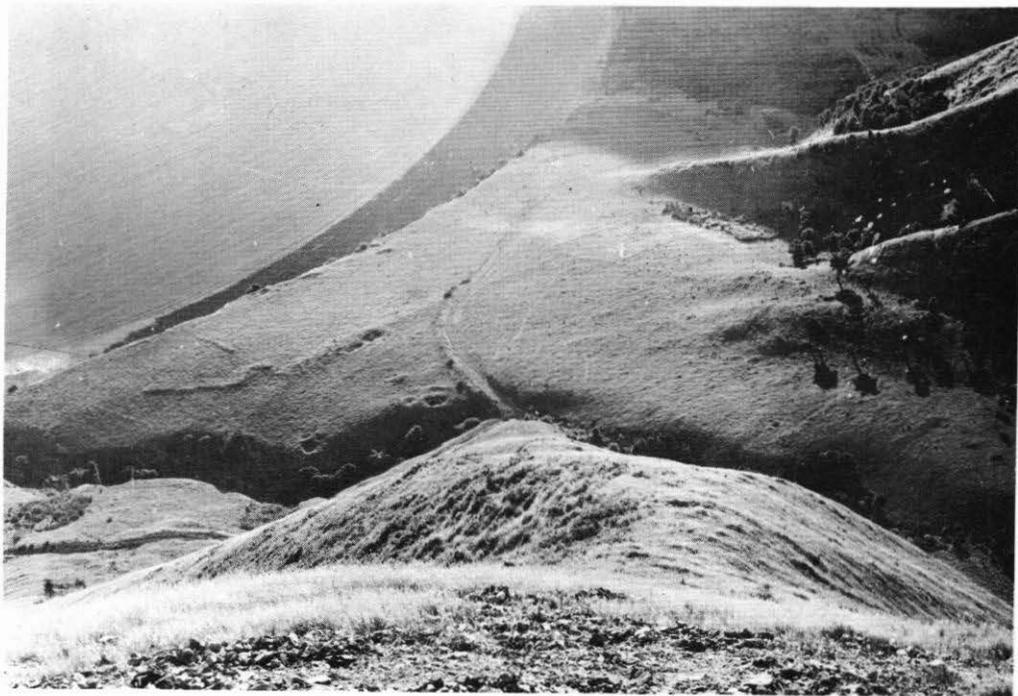


Plate 5



Plate 6

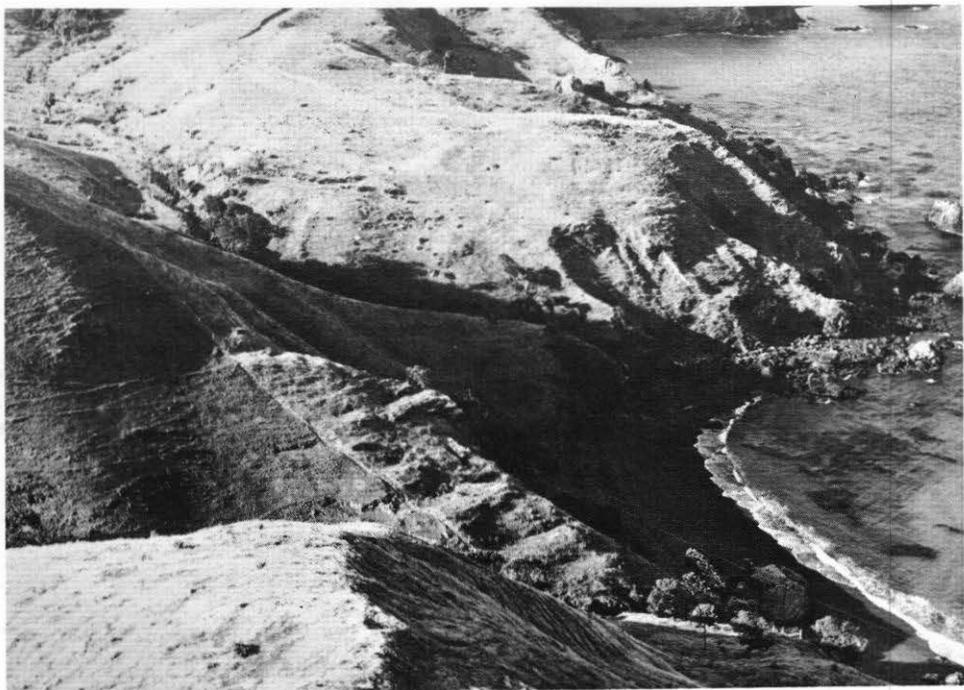


Plate 7



Plate 8

	Port Hardy	Long Beach	Swamp Bay and Puketutu Bay <sup>1</sup>	Total Greville Harbour	Manawakupakupa and Opotiki <sup>2</sup>	Patuki <sup>3</sup>	TOTALS
FIGURE	2	3	4	3-4	5	6	
<i>Pa</i>	2	-	-	-	-	-	2
Pit sites	24	8	13	21	11	9	65
Pit and terrace sites	3	-	3	3	-	6	12
Terrace sites	2	2	1	3	2	5	12
Occupation sites	14	4	2	6	1	-	21
Midden sites	33	4	4	8	5	6	52
Walled gardens	-	-	-	-	2	-	2
Quarry/flaking floors	3	-	-	-	-	-	3
	81	18	23	41	21	26	169
FEATURES							
Pits on pit sites	65	46	60	106	50	20	241
Pits on pit and terrace sites	3	-	13	13	-	53	69
Total pits (all sites)	77	46	69	115	69	73	334
Terraces on terrace sites	5	15	6	21	2	25	53
Terraces on pit and terrace sites	3	-	33	33	-	49	85
Total terraces (all sites)	22	15	39	54	4	74	154

1. All sites on Figure 4 except S10/132
2. All sites on Figure 5 except the Sandy Bay sites and sites S10/156-159.
3. Sites on the east coast only, south of S5 and 6/48.

TABLE 2: Site statistics relevant to the maps (Figures 2-6) and sections (Fig. 7).

In Figure 7 the pattern of sites is shown in progression away from the shore up the steep hillsides. It must be remembered that some sites shown are not widespread even in the limited areas covered. For example, there are only two *pa* in Port Hardy, and it is only at Long Beach in Greville Harbour that midden and occupation sites are to be found behind the swamp or lagoon area. Heights above sea level were not accurately measured although errors, especially where a large number of sites is involved, tend to cancel each other out and the errors will be of the same order for each site type.

With the exception of terrace sites in the Greville Harbour graph all four areas show a progression up the hillsides from terrace to pit and terrace to pit sites. This is regardless of the average heights of sites above the shore.

The rich soils and relatively easy hillsides of Patuki Station on which Wakefield saw extensive cultivation show a wide dispersal of sites very different from the Manawakupakupa-Opotiki area where the walled garden areas are on tiny shingle fans beneath abrupt spurs of unyielding Greville formation argillites. Indeed, just as the biggest pit sites are to be found on the best soils, so geology dictates the reach of earthwork sites up the spurs. This may result directly from the difficulty of excavation, or it may be the indirect result of limited garden areas.

Topography also plays a part in site distribution. Here the 11 terrace or pit and terrace sites in the area of interest on Patuki Station may be compared with the 12 in the other four mapped areas put together. The earthwork sites on Patuki - which we may assume were in part for living on - take up the role of beach occupation sites in other parts of the island. At Patuki there is simply no room for living at sea level.

The inclusion of pits close to and within the presumed garden areas at Opotiki and Manawakupakupa suggests that pit sites elsewhere on the island were similarly handy to garden areas for which at present we have no archaeological evidence.

It is common to all four areas that pit sites show a greater range of heights above sea level than other earthwork site types. The latter probably included living areas, and it seems sensible for living areas to be equally accessible to shore and sea food resources as to food storage pits. Pit sites, however, do not relate directly to the sea in this way. They relate to garden areas and to living quarters.

The large occupation sites in the west coast harbours of D'Urville Island may represent large settlements or a long series of small settlements more or less in the same place. It is of interest here simply that they form the basis of a pattern of sites very dissimilar to that of other parts of the island.



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